

Serial No. 10/643,946

ASA-1145

Amendment

Responsive to Office Action dated October 31, 2007

REMARKS**Pending Claims**

New claim 10 has been added by the present amendment. Accordingly, claims 6-10 are pending. No new matter has been added.

Claim Rejections under 35 U.S.C. §103

Claims 6- 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Japan '653. Applicants request reconsideration of the rejection in view of the foregoing amendments and for the following reasons.

According to the claimed embodiment, a gas flow of a perfluorocompound is diluted with nitrogen or air and added steam is brought into contact with a catalyst, which is heated, in a reactor. The catalyst comprises a composite oxide of Ni and Al and a composite oxide of Ni and W, which has been packed in the reactor. The composite oxide of Ni and W, e.g. NiW_{04} activates H_2O . The composite oxide of Al and Ni, e.g., AlNi_{04} , decomposes PFC. The coexistence of the composite oxides attains an improvement in the decomposition performance of the PFC.

According to an embodiment of the invention that is not shown or described in the prior art of record, the catalyst contains W in a proportion of 1 to 5 wt% based on the total weight of the catalyst comprising the composite oxide of Ni and Al. See page 4, lines 18-22 of the Specification, for example. Accordingly, claim 6 has been amended to set forth this limitation, which is supported by the application as filed.

As amended, claim 6 is not rendered obvious by the JPN '653 reference. In particular, applicants refer to Figure 3 of the application which shows the relation between the amount of W and the percentage of CF_4 decomposition and reaction

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temperature. In particular, Figure 3 shows the effect of the addition of W when the amount of W is 1-5 wt%. The effect of the addition of W in the amount of 1-5 wt% in the claimed embodiment is not disclosed or suggested by the cited reference.

The prior art does not suggest the claimed composite oxide of Ni and Al and composite oxide of Ni and W in which the catalyst contains W in a proportion of 1 to 5 wt% based on a total weight of the catalyst comprising composite oxide of Ni and Al. In particular, it is not recognized in the prior art that an Ni oxide reacts with a W oxide more readily than with an Al oxide, as shown by the following formulae, in which the larger the ΔG , the more easily the reaction occurs.



Thus, for forming both a composite oxide of Ni and Al and a composite oxide of Ni and W, it is more efficient to previously form NiAl_2O_4 , and subsequently, form NiWO_4 . Moreover, since the amounts of alumina and Ni are larger than W ($\text{Al} > \text{Ni} > \text{W}$), it is effective that W is impregnated at a later stage. See page 12, lines 4-22 of the Specification in which the catalyst 2 of the disclosure is set forth with respect to a catalyst comprising Ni and Al that is impregnated. The presence of NiAl_2O_4 and NiWO_4 was confirmed, according to the description of catalyst 2.

Further, according to the embodiments of the invention, the molar amount of Ni is larger than W and the composite oxide of Ni and W, and the composite oxide Al and Ni coexist, however this is not disclosed in the JPN '653 reference. That is, since W is added after generation of the composite oxide Al/Ni, both the composite oxides coexist to attain a high PFC decomposition performance. This is not suggested by the JPN '653 reference. Accordingly, applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn.

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New Claim

Applicants have added new claim 10, which is directed to the catalyst being produced by preparing the composite oxide of Ni and Al, and subsequently impregnating the composite oxide with a W compound. See page 12, lines 4-22 for support of the new claim. New claim 10 is patentable over JPN '653 and the remainder of the art of record, at least for being dependent from a base claim asserted to be patentable for the foregoing reasons.

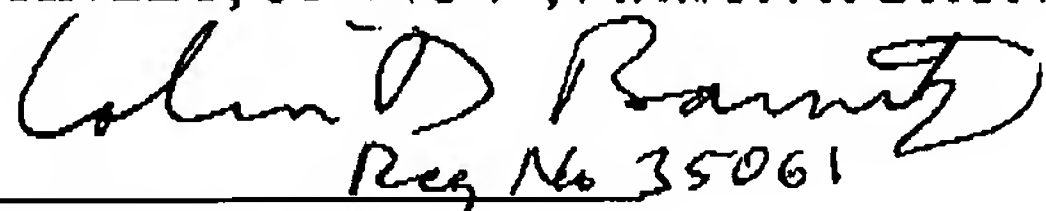
Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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